

and build your equipment such that operators can reasonably be expected to fill the fuel tank without spitback or spillage during the refueling event. The following examples illustrate designs that meet this requirement:

(i) Equipment that is commonly refueled using a portable gasoline container should have a fuel tank inlet that is larger than a typical dispensing spout. The fuel tank inlet should be located so the operator can place the nozzle directly in the fuel tank inlet and see the fuel level in the tank while pouring the fuel from an appropriately sized refueling container (either through the tank wall or the fuel tank inlet). We will deem you to comply with the requirements of this paragraph (f)(3)(i) if you design your equipment to meet applicable industry standards related to fuel tank inlets.

(ii) Marine SI vessels with a filler neck extending to the side of the boat should be designed for automatic fuel shutoff. Alternatively, the filler neck should be designed such that the orientation of the filler neck allows dispensed fuel that collects in the filler neck to flow back into the fuel tank. A filler neck that ends with a horizontal or nearly horizontal segment at the opening where fuel is dispensed would not be an acceptable design.

(g) Components and equipment must meet the standards specified in this part throughout the applicable useful life. Where we do not specify procedures for demonstrating the durability of emission controls, use good engineering judgment to ensure that your products will meet the standards throughout the useful life. The useful life is one of the following values:

(1) The useful life in years specified for the components or equipment in the exhaust standard-setting part.

(2) The useful life in years specified for the engine in the exhaust standard-setting part if the exhaust standards are specified for the engine rather than the equipment and there is no useful life given for components or equipment.

(3) Five years if no useful life is specified in years for the components, equipment, or engines in the exhaust standard-setting part.

§ 1060.102 What permeation emission control requirements apply for fuel lines?

(a) Nonmetal fuel lines must meet permeation requirements as follows:

(1) Marine SI fuel lines, including fuel lines associated with outboard engines or portable marine fuel tanks, must meet the permeation requirements in this section.

(2) Large SI fuel lines must meet the permeation requirements specified in 40 CFR 1048.105.

(3) Fuel lines for recreational vehicles must meet the permeation requirements specified in 40 CFR 1051.110 or in this section.

(4) Small SI fuel lines must meet the permeation requirements in this section, unless they are installed in equipment certified to meet diurnal emission standards under § 1060.105(e).

(b) Different categories of nonroad equipment are subject to different requirements with respect to fuel line permeation. Fuel lines are classified based on measured emissions over the test procedure specified for the class.

(c) The regulations in 40 CFR part 1048 require that fuel lines used with Large SI engines must meet the standards for EPA Low-Emission Fuel Lines. The regulations in 40 CFR part 1054 require that fuel lines used with handheld Small SI engines installed in cold-weather equipment must meet the standards for EPA Cold-Weather Fuel Lines. Unless specified otherwise in this subchapter U, fuel lines used with all other engines and equipment subject to the provisions of this part 1060, including fuel lines associated with outboard engines or portable marine fuel tanks, must meet the standards for EPA Nonroad Fuel Lines.

(d) The following standards apply for each fuel line classification:

(1) EPA Low-Emission Fuel Lines must have permeation emissions at or below 10 g/m²/day when measured according to the test procedure described in § 1060.510. Fuel lines that comply with this emission standard are deemed to comply with all the emission standards specified in this section.

(2) EPA Nonroad Fuel Lines must have permeation emissions at or below 15 g/m²/day when measured according

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to the test procedure described in § 1060.515.

(3) EPA Cold-Weather Fuel Lines must meet the following permeation emission standards when measured according to the test procedure described in § 1060.515:

TABLE 1 TO § 1060.102—PERMEATION STANDARDS FOR EPA COLD-WEATHER FUEL LINES

Model year	Standard (g/m ² /day)
2012	290
2013	275
2014	260
2015	245
2016 and later	225

(e) You may certify fuel lines as follows:

(1) You may certify straight-run fuel lines as sections of any length.

(2) You may certify molded fuel lines in any configuration representing your actual production, subject to the provisions for selecting a worst-case configuration in § 1060.235(b).

(3) You may certify fuel line assemblies as aggregated systems that include multiple sections of fuel line with connectors and fittings. For example, you may certify fuel lines for portable marine fuel tanks as assemblies of fuel hose, primer bulbs, and self-sealing end connections. The length of such an assembly must not be longer than a typical in-use installation and must always be less than 2.5 meters long. You may also certify primer bulbs separately. The standard applies with respect to the total permeation emissions divided by the wetted internal surface area of the assembly. Where it is not practical to determine the actual internal surface area of the assembly, you may assume that the internal surface area per unit length of the assembly is equal to the ratio of internal surface area per unit length of the hose section of the assembly.

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§ 1060.103 What permeation emission control requirements apply for fuel tanks?

(a) Fuel tanks must meet permeation requirements as follows:

(1) Marine SI fuel tanks, including engine-mounted fuel tanks and port-

able marine fuel tanks, must meet the permeation requirements in this section.

(2) Large SI fuel tanks must meet diurnal emission standards as specified in § 1060.105, which includes measurement of permeation emissions. No separate permeation standard applies.

(3) Fuel tanks for recreational vehicles must meet the permeation requirements specified in 40 CFR 1051.110 or in this section.

(4) Small SI fuel tanks must meet the permeation requirements in this section unless they are installed in equipment certified to meet diurnal emission standards under § 1060.105(e).

(b) Permeation emissions from fuel tanks may not exceed 1.5 g/m²/day when measured at a nominal temperature of 28 °C with the test procedures for tank permeation in § 1060.520. You may also choose to meet a standard of 2.5 g/m²/day if you perform testing at a nominal temperature of 40 °C under § 1060.520(d).

(c) The exhaust standard-setting part may allow for certification of fuel tanks to a family emission limit for calculating evaporative emission credits as described in subpart H of this part instead of meeting the emission standards in this section.

(d) For purposes of this part, fuel tanks do not include fuel lines that are subject to § 1060.102, petcocks designed for draining fuel, grommets used with fuel lines, or grommets used with other hose or tubing excluded from the definition of “fuel line.” Fuel tanks include other fittings (such as fuel caps, gaskets, and O-rings) that are directly mounted to the fuel tank.

(e) Fuel caps may be certified separately relative to the permeation emission standard in paragraph (b) of this section using the test procedures specified in § 1060.521. Fuel caps certified alone do not need to meet the emission standard. Rather, fuel caps would be certified with a Family Emission Limit, which is used for demonstrating that fuel tanks meet the emission standard as described in § 1060.520(b)(5). For the purposes of this paragraph (e), gaskets or O-rings that are produced as part of an assembly with the fuel cap are considered part of the fuel cap.